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EXAMINER

KURR, JASON RICHARD

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2614

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,630	Applicant(s) MERTENS, MARK JOZEF WILLEM	
	Examiner JASON R. KURR	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16 and 30-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16, 30-40 and 43-53 is/are rejected.
- 7) ☒ Claim(s) 41 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 32, 34-37, 46-48 and 51 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang (US 7,349,548 B2).

With respect to claim 32, Wang discloses a device, comprising: a first input adapted to receive a first audio signal (fig.1 #10a); a second input adapted to receive a second audio signal (fig.1 #10b); a selection device (fig.1 #20,22,14) adapted to receive a user selection signal and in response thereto to select one of the first and second audio signals as a main audio signal; and to select another of the first and second audio signals as an auxiliary audio signal (col.5 ln.6-20); and an automatic adjustment unit (fig.1 #12) adapted to receive the auxiliary audio signal and to receive an auxiliary level control signal derived from the main audio signal, and in response thereto to automatically adjust a level of the auxiliary audio signal to have a particular ratio with respect to a level of the main audio signal (col.4 ln.56-67, col.5 ln.1-5).

With respect to claim 34, Wang discloses the device of claim 32, further comprising a main audio adjustment unit (fig.1 #16) adapted to receive a main level control signal and in response thereto, to adjust the level of the main audio signal.

With respect to claim 35, Wang discloses the device of claim 34, and wherein the selection device comprises: a first input adapted to receive an output of the main audio adjustment unit (fig.1 "signal from 12 to 14"); a second input adapted to receive an output of the auxiliary audio adjustment unit (fig.1 "different signal from 12 to 14"); a third input adapted to receive the main level control signal (fig.1 "signal from 20 to 12"); and a fourth input adapted to receive the user selection signal (fig.1 "signal from 22 to 20"), wherein in response to the user selection signal, the selection device supplies the auxiliary level control signal as a control input to the auxiliary audio adjustment unit, and supplies the main level control signal as a control input to the main audio adjustment unit (col.4 ln.56-67, col.5 ln.1-5).

With respect to claim 36, Wang discloses the device of claim 32, wherein the particular ratio is stored in a memory of the device (fig.1 #24, col.4 ln.33-55).

With respect to claim 37, Wang discloses the device of claim 36, wherein the memory stores a plurality of ratios, and the device selects one of the ratios to be the particular ratio (fig.1 #24, col.4 ln.33-55).

With respect to claim 46, Wang discloses a method, comprising: receiving a first audio signal (fig.1 "signal from #10a"); receiving a second audio signal (fig.1 "signal from #10b"); receiving a main level control signal (fig.1 "signal from #20 to #12"); receiving a user selection signal (fig.1 "signal from #22") identifying a selected one of

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the first and second audio signal to be a main audio signal (col.5 ln.6-20), the other of the first and second audio signals being non-selected; in response to the user selection signal, connecting the selected one of the first and second audio signals to a main audio adjustment unit (fig.1 #12a), and connecting the non-selected one of the first and second audio signals to an auxiliary audio adjustment unit (fig.1 #12b); adjusting a level of the main audio signal by means of the main audio adjustment unit in response to the main level control signal; and automatically adjusting a level of the auxiliary audio signal by means of the auxiliary audio adjustment unit to have a particular ratio with respect to the level of the main audio signal (col.4 ln.56-67, col.5 ln.1-5).

With respect to claim 47, Wang discloses the method of claim 46, further comprising retrieving the particular ratio from a memory device (fig.1 #24, col.4 ln.33-55).

With respect to claim 48, Wang discloses the method of claim 47, further comprising: storing a plurality of ratios in the memory device; and selecting one of the ratios to be the particular ratio (fig.1 #24, col.4 ln.33-55).

With respect to claim 51, Wang discloses the method of claim 46, further comprising: determining an actual ratio of the level of the auxiliary audio signal and the level of the main audio signal; and comparing the actual ratio to the particular ratio; and controlling the gain of an adjustable gain amplifier in the auxiliary audio adjustment unit to make the actual ratio equal to the particular ratio (col.4 ln.33-55).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Suzuki (US 5,054,077) and in further view of Weber (US 6,396,549 B1).

With respect to claim 16, Wang discloses a device for controlling the sound levels of a group of audio channels having a main channel (MC)(fig.1 #10a) and at least one auxiliary channel (AC1)(fig.1 #10b) which can be rendered simultaneously, the device including user controlled selection means (fig.1 #20,22,14) for selecting the main channel (col.5 ln.6-20), and automatic level adjustment means (fig.1 #12) for adjusting the sound level of the at least one auxiliary channel relative to the main channel (col.4 ln.56-67, col.5 ln.1-5). Wang does not disclose expressly a first user-operable control device for selecting the main channel (MC); and a second user-operable control device which responds to a user control to toggle among a plurality of pre-set relative sound level ratios between the main channel (MC) and the at least one auxiliary channel (AC1).

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Suzuki discloses a first user-operable control device for selecting the main channel (MC) (fig.1 #31); and a second user-operable control device (fig.1 #32) which responds to a user control to toggle among a plurality of pre-set relative sound level ratios between the main channel (MC) and the at least one auxiliary channel (AC1) (col.3 ln.4-14). At the time of the invention it would have been obvious to a person of ordinary skill in the art to provide the first and second user-operable control devices of Suzuki to control the levels of the main and auxiliary signals of Wang. The motivation for doing so would have been to allow the user to control the ratio of levels between the output signals such a selected main channel may be increased relative to any auxiliary channel. This would allow a user to boost desired signals such as from a desired source.

Wang and Suzuki do not disclose expressly wherein the device is used with a remote control device.

Weber discloses a remote control unit (fig.1 #1) to be used with a volume control device (fig.1 #2) comprising selection interface components (fig.1 #5) for selecting a main channel (col.9 ln.52-59). At the time of the invention it would have been obvious to a person of ordinary skill in the art use the remote control unit of Weber to control the channels of Suzuki. The motivation for doing so would have been to allow a user to control the invention of Suzuki from a distant position.

With respect to claim 30, Wang discloses the remote control unit of claim 16, wherein the second user-operable control device is a toggle stick (Suzuki: fig.1 #40) configured such that when a user moves the toggle stick in a first direction, the device

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switches to a one of the plurality of pre-set relative sound level ratios that is greater than a pre-set relative sound level ratio that was selected prior to moving the toggle stick in the first direction, and when the user moves the toggle stick in a second direction opposite the first direction, the device switches to a one of the plurality of pre-set relative sound level ratios that is less than a pre-set relative sound level ratio that was selected prior to moving the toggle stick in the second direction (Suzuki: col.4 ln.5-56). It is clear that when the toggle stick of the fader is moved in either direction the ratios of levels with respect to the auxiliary channels also changed in a pre-set manner.

With respect to claim 31, Wang discloses the remote control unit of claim 16, wherein the second user-operable control device is a toggle stick (Suzuki: fig.1 #40) configured such that when a user moves the toggle stick, the device temporarily selects a new one of the plurality of pre-set relative sound level ratios that has a different value compared to a pre-set relative sound level ratio that was selected prior to moving the toggle stick, and after a fixed period of time, automatically selects again the pre-set relative sound level ratio that was selected prior to moving the toggle stick (Suzuki: col.4 ln.5-56). It is clear that each toggle stick of each fader operates in the manner according the disclosure of column 4, such that the movement of the toggle stick effects the pre-set ratios of the channels.

Claims 33 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Kaneko et al (US 4,464,781).

With respect to claim 33, Wang discloses the device of claim 32, wherein the selection device comprises: first and second inputs adapted to receive the first and second audio signals (fig.1 "inputs from 10"), respectively; a first output adapted to output the main audio signal and the auxiliary audio signal (fig.1 "output of #14"). Wang does not disclose expressly wherein the selection device comprises a first and second output.

Kaneko discloses wherein a selection device comprises first and second outputs (fig.1 "front and rear"), and a switching device (fig.1 #16L,R) adapted, in response to a user selection to selectively connect the first input to one of a first and second output, and to selectively connect the second input to another one of the first and second outputs. At the time of the invention it would have been obvious to a person of ordinary skill in the art to provide a multiple outputs and a switching device for selecting the outputs to the device of Wang as provided by Kaneko. The motivation for doing so would have been reproduce each signal by a different audio transducer, such that each sound emanates from a different direction. Such a system would add depth to the reproduced signal.

With respect to claim 43, Wang discloses the device according to claim 32, however does not disclose expressly a first output for outputting the main audio signal to a first transducer; and a second output for outputting the auxiliary audio signal to a second transducer separate and spaced apart from the first transducer.

Kaneko discloses a multi-channel level adjustment device wherein each channel (fig.1 "Left, Right Channel") are rendered by different transducers (fig.1 #12R,L, 15R,L).

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At the time of the invention it would have been obvious to a person of ordinary skill in the art to output each channel of Wang to different loudspeakers as performed by Kaneko. The motivation for doing so would have been to accurately reproduce the audio signals according to the position of the sound source. For example, sound of a right channel should be reproduced on the right side of a listener.

Claims 38 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Vaudrey et al (US 6,311,155 B1).

With respect to claim 38, Wang discloses the device of claim 37, however does not disclose expressly wherein the device selects one of the ratios to be the particular ratio in response to metadata that identifies a type of audio content included in at least one of the main audio signal and the auxiliary audio signal.

Vaudrey discloses a device that selects the audio level in response to metadata that identifies the type of audio content included in the signal (col.22 ln.23-63). At the time of the invention it would have been obvious to a person of ordinary skill in the art to adjust the signal of Wang according to encoded metadata as performed by Vaudrey. The motivation for doing so would have been to reproduce the audio signal as originally intended prior to encoding of the signal.

With respect to claim 49, Wang discloses the method of claim 48, however does not disclose expressly wherein selecting one of the ratios to be the particular ratio comprises: receiving metadata that identifies a type of audio content included in at least

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one of the main audio signal and the auxiliary audio signal; and selecting the particular ratio in response to the metadata.

Vaudrey discloses a device that selects the audio level in response to metadata that identifies the type of audio content included in the signal (col.22 ln.23-63). At the time of the invention it would have been obvious to a person of ordinary skill in the art to adjust the signal of Wang according to encoded metadata as performed by Vaudrey. The motivation for doing so would have been to reproduce the audio signal as originally intended prior to encoding of the signal.

Claims 39, 50 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2).

With respect to claim 39 and 50, Wang discloses the device and methods of claims 37 and 48, however does not disclose expressly wherein the device or method determines a frequency spectrum characteristic of at least one of the main audio signal and the auxiliary audio signal and in response thereto selects one of the ratios to be the particular ratio. Official Notice is taken that it is well known in the art to determine and split and audio signals according to frequency ranges such that the signal is amplified according to the determined frequency spectrum. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use amplify the signal of Wang according to its frequency spectrum. The motivation for doing so would have been to boost certain frequency bands relative others, such as those containing speech.

With respect to claim 52, Wang discloses the method of claim 51, however does not disclose expressly further comprising: calculating a signal power of the auxiliary audio signal over a set time period; and calculating a signal power of the main audio signal over the set time period. Official Notice is taken that it is well known in the art to calculate the power of signals when comparing characteristics such as level over a period of time. At the time of the invention it would have been obvious to a person of ordinary skill in the art to calculate the power of the audio signals of Wang in order to determine that the selected main signal comprises a greater average power than the unselected auxiliary channels. This would ensure that the appropriate signal gains are applied to each channel.

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Allred (US 6,965,676 B1).

With respect to claim 40, Wang discloses the device of claim 32, however does not disclose expressly wherein the automatic adjustment unit comprises: a level control unit; and an adjustable gain amplifier adapted to amplify the auxiliary audio signal, wherein the level control unit is adapted to provide a gain control signal for controlling a gain of the adjustable gain amplifier.

Allred discloses an automatic adjustment unit comprising: a level control unit (fig.2 #24,30); and an adjustable gain amplifier (fig.2 #32) adapted to amplify the auxiliary audio signal, wherein the level control unit is adapted to provide a gain control signal (fig.2 "Ac") for controlling a gain of the adjustable gain amplifier (col.4 ln.11-40).

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At the time of the invention it would have been obvious to a person of ordinary skill in the art that the adjustment units of Wang would include an adjustable gain amplifier controlled by the control signal from controller #20, such as the adjustable amplifiers of Allred. The motivation for so doing so would have been to realize a gain adjustment as controlled by the controller #20.

Claims 44 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Sato et al (US 5,048,091).

With respect to claim 44, Suzuki discloses the device according to claim 32, however does not disclose expressly wherein the automatic adjustment unit is adapted to change the particular ratio from a first value to a second value temporarily in response to a characteristic being present in audio content included in at least one of the main audio signal and the auxiliary audio signal, and automatically changing the particular ratio back to the first value when the characteristic is no longer present in the audio content.

Sato discloses a level adjustment means (fig.1 "A,B") arranged for speech detection and speech level control (col.3 ln.9-17) such that when a characteristic is detected within the signal such as speech, the means changes the signal level of the output signal . At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the speech detection and level control means of Sato in the level adjustment means of Wang. The motivation for doing so would have been to

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reproduce speech content of each channel so as the speech is not drowned out by other audio signals, such as background music.

With respect to claim 53, Wang discloses the method of claim 47, however does not disclose expressly further comprising: changing the particular ratio from a first value to a second value temporarily in response to a characteristic being present in audio content included in at least one of the main audio signal and the auxiliary audio signal; and automatically changing the particular ratio back to the first value when the characteristic is no longer present in the audio content.

Sato discloses a level adjustment means (fig.1 "A,B") arranged for speech detection and speech level control (col.3 ln.9-17) such that when a characteristic is detected within the signal such as speech, the means changes the signal level of the output signal . At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the speech detection and level control means of Sato in the level adjustment means of Wang. The motivation for doing so would have been to reproduce speech content of each channel so as the speech is not drowned out by other audio signals, such as background music.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang (US 7,349,548 B2) in view of Rodriguez et al (US 7,373,650 B1)

With respect to claim 45, Wang discloses the device of claim 32, however does not disclose expressly further comprising a video display screen, wherein the video display screen is adapted to be divided into at least a first part for displaying a first video

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program associated with the first audio signal, and a second part for displaying a second video program associated with the second audio signal.

Rodriguez discloses a video display screen (fig.5E #225), wherein the video display screen is adapted to be divided into at least a first part for displaying a first video program, and a second part for displaying a second video program (col.29 ln.10-21). At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the audio control circuit of Wang with a screen-in-screen video setup such as provided by Rodriguez. The motivation for doing so would have been to allow a user to individually control the volume of each audio signal associated with each video window. This would allow a user to increase or decrease the volume of a desired program.

Allowable Subject Matter

Claims 41 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON R. KURR whose telephone number is (571)272-0552. The examiner can normally be reached on M-F 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 273-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Jason R Kurr/
Examiner, Art Unit 2614

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614